

Energy Efficient Ethernet

Another Look at the Objectives

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Agenda

- Goal of the presentation
- Review current objectives
 - Point out some subtle issues
- Suggest text for refined objectives

Goal of the Presentation

- To harmonize the objectives with the discussions, suggestions etc. of the Ottawa meeting by introducing more robust language
- The goal is NOT to slow down the progress of EEE

Areas to Consider

- Scope of objectives

as written is limiting, even for some of the suggested in Ottawa. Here are some examples

- Wake on LAN
- 10BASE-T voltage profile
- Ability to switch between non-consecutive speeds

- Ambiguous

Specifically the language surrounding transition time is ambiguous. What is a “higher layer connection”?

Review Current Objectives

Define a mechanism to change between 10GBASE-T and 1000BASE-T operation more rapidly than auto-negotiation without loss of higher layer connection (approved 3/15/07: All 9/0/4)

Define a mechanism to change between 100BASE-TX and 1000BASE-T operation more rapidly than auto-negotiation without loss of higher layer connection (approved 3/15/07: All 8/0/4)

Define a mechanism to change between 10GBASE-KR & 1000BASE-KX more rapidly than auto-negotiation without loss of higher layer connection (approved 3/15/07: All 7/0/4)

Define a mechanism to change between 10GBASE-KX4 and 1000BASE-KX more rapidly than auto-negotiation without loss of higher layer connection (approved 3/15/07: All 9/0/4)

Define one communications mechanism to negotiate and control rapid speed change for an EEE capable point-to-point network (approved 3/15/07: All 13/0/1)

No frames in transit shall be dropped or corrupted during speed change (approved 3/15/07: All 9/0/4)

Any new twisted-pair and/or backplane PHY for EEE shall include legacy compatible auto negotiation (approved 3/15/07: All 4/1/7)

Suggested Text for Refined Objectives

- Define a mechanism to reduce power consumption during periods of low link utilization for the following PHYs
 - 100BASE-TX
 - 1000BASE-T
 - 10GBASE-T
 - 1000BASE-KX
 - 10GBASE-KR
 - 10GBASE-KX4
- Define a protocol to coordinate transitions to or from a lower power consumption state
- The transition time to and from the lower power state should be transparent to upper layer protocols and applications
- The link status should not change as a result of the transition
- No frames in transit shall be dropped or corrupted during the transition to and from the lower power state